Remarks

Drawings / Specification

The drawings stand objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference characters not mentioned in the description: A) In Figure 2, components W1 and W2 are not described in the original description of Figure 2.

Applicants respectfully submit that the specification has been amended as set forth above to overcome this objection. More specifically, the paragraph beginning at page 7, line 1 has been amended to make reference to weights w1 and w2, which were previously referred to generally as w_i, i being a numerical index. Applicants assert that this amendment adds no new matter to the application and is consistent with the application as filed.

In light of the foregoing, Applicants respectfully requests reconsideration and withdrawal of the objection to Figure 2.

Claims

Claims 1-9 are pending in the present application.

Claims 6, 8, and 9 stand objected to due to various informalities.

Claim 6 stands rejected under 35 U.S.C. § 112, second paragraph as being incomplete for omitting essential elements, such omission amounting to a gap between elements.

Claims 1-5 and 7-9 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Brittain (US patent application 2002/014423 A1) (Brittain) and its subsequent US patent (US 6,794,869 B2).

Claims 1-6 and 8-10 remain in the application unamended.

Claims 1, 4, 5, 6, 8,and 9 have been amended.

Claim 3 has been canceled.

Claims 2 and 7 remain in the application unamended.

Claim Objections

Claim 6 has been amended to read: A method as claimed in Claim 5, wherein said generally increasing with distance with respect to an edge of the spatial region of the basis dataset concerned is more strongly increased as there is less overlap between the adjacent spatial regions.

In light of the filling in of the missing word "increased", Applicants respectfully request reconsideration and withdrawal of the objection of claim 6.

Claim 8 has been amended to remove an "a" to make the claim grammatically correct as suggested by the Office Action.

Claim 9 has been amended to depend from claim 8 as suggested by the Office Action.

In light of these amendments, reconsideration and withdrawal of the objections to claims 8 and 9 is respectfully requested.

Rejections under 35 U.S.C. § 112, second paragraph

Claim 6 has been amended to read: A method as claimed in Claim 5, wherein said generally increasing with distance with respect to an edge of the spatial region of the basis dataset concerned is more strongly increased as there is less overlap between the adjacent spatial regions.

In light of the filling in of the missing word "increased", Applicants respectfully request withdrawal and reconsideration of the rejection of claim 6.

It should also be noted that the other amendments to claim 6 were made in connection with the amendments to claims 4 and 5 which are addressed more fully below.

Rejections under 35 U.S.C. § 102(e)

Claim 1 as amended is directed to a method of data-processing to form a compound object data set from a plurality of basis datasets the basis datasets assigning datavalues to spatial positions in an at least three-dimensional space, the basis datasets being associated with mutually overlapping regions, the method comprising the step of deriving compound datavalues for spatial positions in the overlapping regions from

datavalues of respective basis datasets, wherein the calculation of compound datavalues involves a weighted interpolation.

It is respectfully asserted that Brittain does not teach or suggest all of the limitations of claim 1.

By way of background, at page 6, line 4 *et seq.* the present application is directed to a method of data processing to form a compound object dataset from basis datasets. By way of example Figure 2 shows the formation of the compound object dataset 11 from two basis datasets 12,13. The basis datasets 12,13 have a spatial overlap (o) in which there are four slices associated in common with both adjacent basis datasets. That is, datavalues are available from both adjacent basis datasets for the same spatial positions. The compound datavalues for the compound object dataset 11 can be computed as follows. Datavalues from the basis datasets 12,13 outside of the overlapping region are carried over to the corresponding position in the compound object dataset 11. Thus the compound data value d_c is:

$$d_c(x,y,z) = d_i(x,y,z) \qquad \text{for (x,y,z) outside of the overlap.}$$

From datavalues d_1, d_2 in the overlapping regions for the respective basis dataset the weighted average computed so as to form the compound datavalue for the spatial position at issue for the compound object dataset

$$d_c(x,y,z) = \sum_i w_i(z) d_i(x,y,z) \qquad \text{for (x,y,z) within the overlap.}$$

The index i runs over the respective basis datasets. The weights $w_i(z)$are graphically shown in the graph in Figure 2. The weights w_i are maximum at the centre of the spatial region of their proper basis datasets and decay towards the periphery of the spatial region of the basis dataset at issue. Thus, the compound datavalues are biased towards the datavalues from the centre regions of the respective basis datasets.

While Brittain teaches that data acquired at different table positions are sorted, interpolated as required, and aligned to match anatomic z locations, See, Brittain, paragraph 0039, it is respectfully asserted that the Office Action has not identified where Brittain teaches or suggests the calculation of compound datavalues involving a weighted interpolation as set forth in claim 1.

In light of the foregoing, Applicants respectfully request reconsideration and withdrawal of the rejection of claim 1.

It should be noted that claim 1 has been amended to include the limitations of claim 3 as originally filed. Accordingly, no new subject matter has been added to claim 1.

Claim 3 has been cancelled in light of the amendment to claim 1.

Claim 4, as amended, is directed to a method as claimed in Claim 1, wherein weights for datavalues of individual basis datasets are associated with their spatial positions in the respective spatial regions of said basis datasets and for respective basis datasets, the weights generally increase with distance with respect to an edge of the spatial region of the basis dataset concerned.

Claim 4 has been amended to depend from claim 1 in light of the amendment to claim 1 and cancellation of claim 3. Claim 4 has also been amended to more clearly indicate the subject matter to which it is directed.

With respect to the rejection of claim 4, Applicants respectfully submit that Brittain does not teach or suggest all of its claim limitations.

As noted above in connection with claim 1, the present application teaches, for example, that weights w1, w2 are maximum at the centre of the spatial region of their proper basis datasets and decay towards the periphery of the spatial region of the basis dataset at issue. Thus, the compound datavalues are biased towards the datavalues from the centre regions of the respective basis datasets.

Also as noted above, Brittain does not teach such weighted interpolation, nor does it teach or suggests that the weights generally increase with distance with respect to an edge of the spatial region of the basis dataset concerned as set forth in claim 4.

In light of the foregoing, and for the reasons set forth above in connection with the patentability of claim 1, from which claim 4 depends, Applicants respectfully request reconsideration and withdrawal of the rejection of claim 4.

Claim 5, as amended, is directed to a method as claimed in Claim 4, wherein the respective basis datasets have neighbouring spatial regions and said generally increasing of the weights with distance with respect to an edge of the spatial region of the basis dataset concerned is dependent on the overlap between the neighbouring spatial regions.

Claim 5 has been amended to more clearly indicate the subject matter to which it is directed.

With respect to the rejection of claim 4, Applicants respectfully submit that Brittain does not teach or suggest all of its claim limitations.

As noted above in connection with claims 1 and 4, the present application teaches, for example, that weights w1, w2 are maximum at the centre of the spatial region of their proper basis datasets and decay towards the periphery of the spatial region of the basis dataset at issue. Thus, the compound datavalues are biased towards the datavalues from the centre regions of the respective basis datasets.

Referring, for example to Figure 2 of the present application, it can be seen that the slopes of the curves showing weights w1 and w2 changes as the overlap between neighboring spatial regions changes.

Applicants respectfully assert that the Office Action has not identified any teaching in Brittain which teaches or suggests where said generally increasing of the weights with distance with respect to an edge of the spatial region of the basis dataset concerned is dependent on the overlap between the neighbouring spatial regions as set forth in claim 5.

In light of the foregoing, and for the reasons set forth above in connection with the patentability of claim 4, from which claim 5 depends, Applicants respectfully request reconsideration and withdrawal of the rejection of claim 5.

Claims 6-9, either originally or as amended, ultimately depend from claim 1. For at least the reasons set forth above in connection with the patentability of claim 1, Applicants respectfully request reconsideration and withdrawal of the rejections of claim 6-9.

Conclusion

Applicants submit that claims 1, 2, and 4-9 distinguish patentably and non-obviously over the prior art of record and are in condition for allowance. An early indication of allowability is earnestly solicited.

If any extension of time is required relative to this Amendment A, Applicants hereby petition for such extension. Authorization to charge deposit account 14-1270 for the fees associated therewith or otherwise necessary in connection with the related application is hereby provided.

Respectfully submitted,

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